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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/009,846 01/20/98 ZAMBIAS

R 5925-061-999

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NEW YORK NY 10036-2711

HM12/1107

EXAMINER

PONNALURI, P

ART UNIT

PAPER NUMBER

1627

DATE MAILED:

11/07/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

28

Office Action Summary

Application No.

09/009,846

Applicant(s)

Zambias et al

Examiner

P. Ponnaluri

Group Art Unit

1627



☒ Responsive to communication(s) filed on May 7, 2000

☐ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 10-13, 17, 18, and 20-25 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 10-13, 17, 18, and 20-25 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 18

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.
2. The supplemental amendment after final filed on 5/17/00 has been fully considered and entered into the application.
3. Claims 1-7, 16 and 19 have been canceled by the supplemental amendment filed on 5/17/00.
4. Claims 10-13, 17-18 and 20-25 are currently pending in this application.
5. The petition under 37 CFR 1.47 (a) has been filed in this application which is granted (see paper number 27), and the case is under Rule 1.47 (a) status.
6. Applicant's arguments with respect to claims 10-13, 17-18, 20-25 have been considered but are moot in view of the new ground(s) of rejection.
7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
8. Claims 10-13, 17-18 and 20-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10, 11, and 22 is vague and indefinite by reciting 'spatially addressable array.' It is not clear how the compounds in the array differ from each other in the spatially addressable array,

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since the molecular core of the compounds is the same, and the structural diversity elements are not defined. Claims 1, 10, 11 and 22 are vague and indefinite by reciting 'structural diversity elements', it is not clear what does applicant mean by structural diversity elements.

Claim 10 is vague and indefinite by reciting 'a) providing a plurality of reaction vessels organized into the first and subarray...', it is not clear how the reactants will be added to the vessels in the subarray form the compounds of the array. The subarrays are separated by the vessels, how will they form a single array. Does applicant refer to each subarray as an array. It is very confusing. Applicants are suggested to clarify.

Claims 11 and 22 are vague and indefinite by reciting 'apportioning into reaction vessels that are identifiable by their spatial addresses', it is not clear what does applicant mean by spatial address, does it mean the location of the vessel or some kind of numbering. The step b) in the claim does it mean that all the first and second compounds in each reaction vessels are added together into one so that one single array of compounds is formed, applicants are requested to clarify.

Claim 12 is vague and indefinite by reciting '.....formatting the contents of the reaction vessels into a spatially-addressable array.', it is not clear how the contents of the reaction vessels is formatted into spatially addressable array. Does it mean that after the reactions are completed the compounds are rearranged.

Claims 20 and 21²⁵ recite 'wherein the compounds of the array provide structure activity relationships useful in the selection...', it is not clear whether the claim is further limiting by

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reciting useful in structural activity relationship or is the claim is drawn to use claim, however, no method steps are recited. Applicants are requested to clarify.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 10-13, 17-18 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over combined teachings of Pirrung et al (Advance ACS Abstract, vol. 8, No. 1, January 1, 1995) and Gallop et al (Journal of Medicinal Chemistry, vol. 37, number 9, April 29, 1994, pages 1233-1251).

Pirrung et al teach a method for preparation and screening against acetylcholine esterase of a non-peptide "indexed" combinatorial library. The reference teaches a combinatorial library composed from nine alcohols and six isocyanates (refers to compounds of the instant claims) to

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formally generate 54 carbomates. The reference teaches to deduce most active member of the library, it was prepared as 15 sublibraries (refers to sub arrays of the instant claims) in which one of the reacting component was fixed (refers to molecular core of the instant claims) and the other reactant used in equimolar mixtures. The reference teaches that the product mixtures were tested and their activities used as indices to the rows and columns of a two dimensional matrix (refers to spatially addressable array of the instant claims) reflecting the actives of individual carbomates. The reference teaches that the indexed libraries offer the advantage that they can be prepared from any class of compounds composed of multiple subunits and that any class type of assay can be used because all compounds are generated in free form (refers to in solution of the instant claims).

The claimed invention differs from the prior art teachings by reciting combinatorial array of at least 500 different compounds. Pirrung et al teach indexed combinatorial library, and the advantages of the indexed library. Pirrung et al do not teach 500 different compounds in the library. Gallop et al review combinatorial techniques and the screening methods. Gallop et al teach that depending on the number of individual compound sin a library (N) depends on the number of building blocks (b) (reactants) available for each step, and the number of reaction steps in reaction scheme (x), and $N = b^x$. i.e., the reference teaches that using 100 building blocks permits the theoretical synthesis of 100 million tetrameric chemical entities (page 1234, and figure 1). Thus, a combinatorial library of 500 different compounds can be prepared using the formula given by Gallop et al. Pirrung et al do not specifically teach the split synthesis. However, the split synthesis method is well known in the art. Gallop et al teach a method for preparation of

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a combinatorial library by the split synthesis method (see page 1242, and figure 2). Thus, it would have been obvious to a person skilled in the art at the time the invention was made to use the split method synthesis with indexed library synthesis method taught by Pirrung et al and use 500 different vessels to obtain 500 different compounds in the library, because Pirrung et al teach indexed libraries by preparing 15 different libraries, and Gallop et al teach a method for split synthesis and a method to determine the number of individual units in a library. A person skilled in the art would have been motivated to use the indexed library of Pirrung et al to synthesize a combinatorial library of 500 different compounds because Pirrung et al teach that the method can be prepared using any class of compounds and can be used for any type of assay because all compounds are generated in a free form/.

11. No claims are allowed.

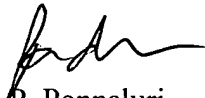
12. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Any inquiry concerning this communication should be directed to P. Ponnaluri whose telephone number is (703) 305-3884. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jyothsna Venkat, can be reached at (703)308-2439. The fax number for this group is (703)305-3014.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (703)308-0196.



P. Ponnaluri
Patent Examiner
Technology center 1600
Art Unit 1627
24 October 2000



DR. JYOTHSNA VENKAT PH.D
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600

Interview Summary

Application No.
09/009,846

Applicant(s)
Zambias et al

Examiner
P. Ponnaluri

Group Art Unit
1627



All participants (applicant, applicant's representative, PTO personnel):

(1) P. Ponnaluri (3) _____
(2) Attorney Ian Scott (4) _____

Date of Interview Oct 24, 2000

Type: ☒ Telephonic ☐ Personal (copy is given to ☐ applicant ☐ applicant's representative).

Exhibit shown or demonstration conducted: ☐ Yes ☒ No. If yes, brief description:

Agreement ☒ was reached. ☐ was not reached.

Claim(s) discussed: _____

Identification of prior art discussed: _____

Description of the general nature of what was agreed to if an agreement was reached, or any other comments:

Informed applicants attorney that the finality of the previous office action would be withdrawn and a new action will be mailed.

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

1. ☒ It is not necessary for applicant to provide a separate record of the substance of the interview.

Unless the paragraph above has been checked to indicate to the contrary, A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a response to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW.

2. ☐ Since the Examiner's interview summary above (including any attachments) reflects a complete response to each of the objections, rejections and requirements that may be present in the last Office action, and since the claims are now allowable, this completed form is considered to fulfill the response requirements of the last Office action. Applicant is not relieved from providing a separate record of the interview unless box 1 above is also checked.

Examiner Note: You must sign and stamp this form unless it is an attachment to a signed Office action.